

## **A New Sponge of Genus *Tethya* (Hadromerida: Thethyidae) from Jeju Island, Korea**

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### **ABSTRACT**

A new species of the genus *Tethya* (Demospongiae: Hadromerida: Thethyidae), *Tethya songakensis*, is collected from Jeju Island, Korea, by scuba diving. This new species is characterized by oxyasters, slender tylasters and spherasters with frequently branched ray. *Tethya songakensis* n. sp. is similar to *T. simi* Sara and Bavestrello, 2000 in megascleres and megasters, but it can be clearly distinguished with the latter by the shape of microasters.

Key words: Thethyidae, *Tethya*, new species, Korea

### **INTRODUCTION**

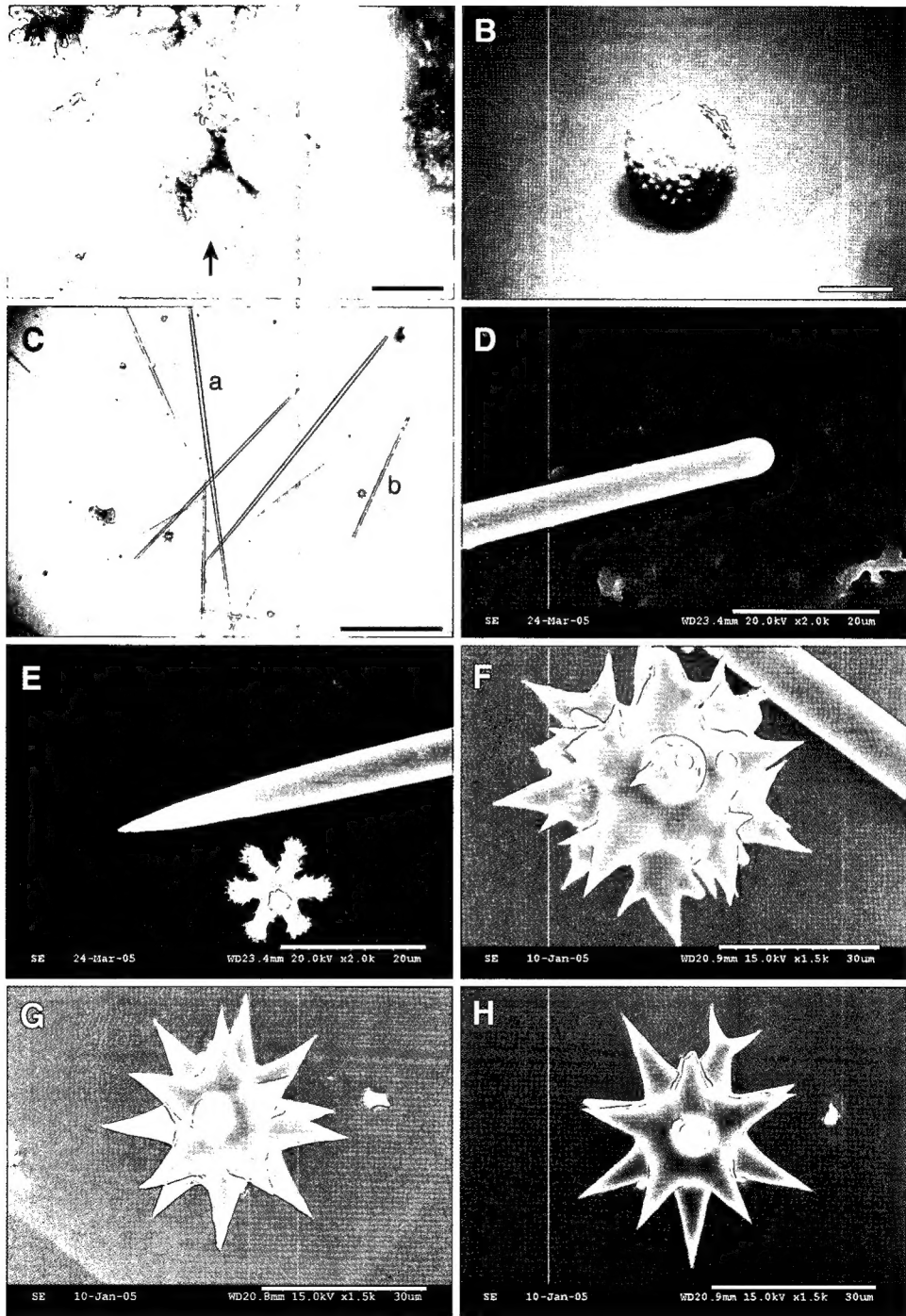
A new species of *Tethya* from Jeju Island is described. The species number of *Tethya* known in the Pacific area amounts to 40 species (Bergquist and Kelly-Borges, 1991; Sara, 1992, 1998; Sara et al., 2000). Of which five species of *Tethya*, *T. amamensis*, *T. simi*, *T. japonica*, *T. koreana* and *T. seychellensis*, have been reported from the Korean waters (Kim et al., 1968; Rho and Sim, 1972, 1979; Sim, 1981; Sara et al., 2000).

The specimens of sponge were collected from Jeju Island by scuba diving at a depth of 5-10 m. The samples were treated in 95% methyl alcohol or absolute alcohol and preserved in the same alcohol solution separately. The external feature of sponges were observed with a stereo-

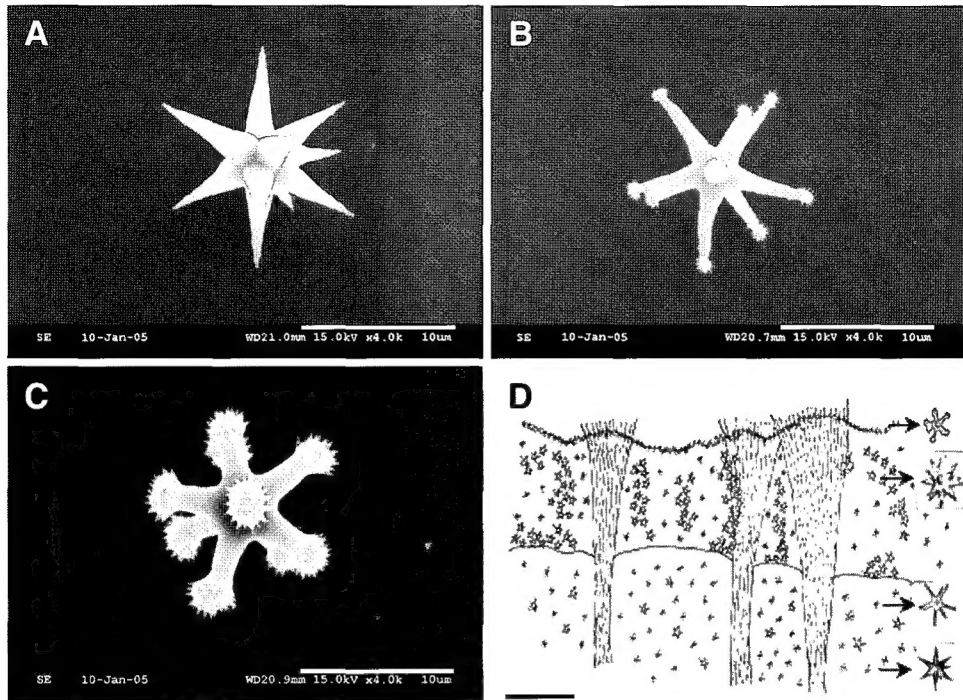
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**Fig. 1.** *Tethya songakensis* n. sp. A, entire animals (Holotype, marked). B, preserved Holotype in alcohol. C, megascleres; a, large strongyloxea, small strongyloxea. D, head of small strongyloxea. E, the point of small strongyloxea. F-H, spherasters in megasters, (SEM). Scale bars: A, 3 cm; B, 2 cm; C, 100  $\mu$ m; D-E, 20  $\mu$ m; F-H, 30  $\mu$ m.



**Fig. 2.** Microscleres of *Tethya songakensis* n. sp. (SEM) A, oxyaster. B, slender tylaster. C, tylaster. D, skeletal structure. Scale bars: A-C, 10  $\mu$ m; D, 100  $\mu$ m.

microscope (Carl Zeiss, Stemi SV 6). The skeletal arrangements were studied under a light microscope (Carl Zeiss, Axioscop II) and SEM (Hitachi, S-3000N). The type specimens are deposited in the Natural History Museum, Hannam University (HUNHM), and the Department of Biological Sciences, Hannam University, Daejeon, Korea.

## SYSTEMATIC ACCOUNTS

Order Hadromerida Topsent, 1894

Family Tethyidae Gray, 1848

Genus *Tethya* Lamarck, 1814

### \**Tethya songakensis* n. sp. (Figs. 1-2)

**Type specimens.** Holotype (Por. 56), the front of Songaksan (Jeju Island), 6 Dec. 2004, SCUBA, 10 m deep, deposited in HUNHM, Korea. Two paratypes (56-1, 56-2) collected together with Holotype, deposited in Department of Biological Sciences, Hannam University, Korea.

**Description of holotype.** Solitary ovoid sponge, 2.6 cm in diameter, with three large raised apical oscules, 0.7-1 mm in diameter. Surface with blunt mammillate tubercles, less than 1 mm

high. Several tubercles support small stalked buds (Fig. 1A-B). Texture, firm. Colour of cortex, rose pink in life and pale purple in alcohol. Always yellow brown in choanosome.

Radiated skeleton, made up stout bundles of strongyloxeas running from centre to surface. Cortical region, 1.8-2.6 mm deep, differentiated and bounded by layer of tylasters under superficial part. Megaster, spheraster, distributed throughout entire cortex, but rare in choanosome. Microaster, oxyasters, slender tylasters, present throughout choanosome (Fig. 2D).

Spicules. Megascleres (Fig. 1C-E); large strongyloxeas, 1,000-1,850  $\mu\text{m}$  in length, 18-30  $\mu\text{m}$  in thickness and small strongyloxeas, 320-960  $\mu\text{m}$  in length and 8-13  $\mu\text{m}$  in thickness. Spherasters with 14-16 rays in megaster, 25-80  $\mu\text{m}$  in diameter (Fig. 1F-H). Microscleres; oxyasters with 13 rays, 9-35  $\mu\text{m}$  in diameter (Fig. 2A), slender tylasters with 10 rays, 13-15  $\mu\text{m}$  in diameter (Fig. 2B). and tylasters with 8-10 rays, 13-15  $\mu\text{m}$  in diameter (Fig. 2C).

**Description of paratypes.** All specimens solitary ovoid sponge, 2-4 cm in diameter, with large raised apical oscules, 0.5-1 mm in diameter. Other characters, surface, texture, colour, and size of spicules, almost same with holotype.

**Etymology.** This species name, *songakensis*, is named after its type locality.

**Remarks.** This new species is characterized by oxyasters, slender tylasters and spherasters with frequently branched ray. *Tethya songakensis* n. sp. is similar to *T. simi* Sara and Bavestrello, 2000 in megascleres and megasters, but can be distinguished by the clear distinction on the shape of microasters with each other.

## ACKNOWLEDGEMENTS

This work was supported by the Korea Research Foundation Grant (KRF-2002-070-C00089).

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RECEIVED: 31 March 2005

ACCEPTED: 3 May 2005

### 한국 제주도산 딸기해면속 (경해면목: 딸기해면과)의 1신종

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### 요 약

한국 제주도에서 scuba 다이빙을 이용하여 채집한 해면동물을 동정·분류한 결과 송악딸기해면 (*Tethya songakensis*)이 신종으로 밝혀졌다. 본 종은 간상성체, 가는 아령성상체 및 가지 끝이 갈라진 구상성체에 의해 특징 지어진다. 많은 구상성체 가지의 끝은 갈라졌다. 송악딸기해면은 주대골편과 거대성체가 *T. simi* Sara and Bavestrello, 2000과 유사하지만 미소성체의 모양에 의해 분명히 구분된다.